E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XC004]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Chevron Point Orient Wharf Removal

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of incidental harassment authorizations.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued two consecutive IHAs to the Chevron Products Company (Chevron) to incidentally harass marine mammals during in-water construction activities associated with the Point Orient Wharf Removal in San Francisco Bay, California.

DATES: These authorizations are effective from June 1, 2022 through May 31, 2023 and June 1, 2023 through May 31, 2024.

FOR FURTHER INFORMATION CONTACT: Jessica Taylor, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary

of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed incidental harassment authorization is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring and reporting of the takings are set forth.

The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On January 11, 2022, NMFS received a request from Chevron for 2 consecutive IHAs to take marine mammals incidental to the Point Orient Wharf Removal in San Francisco Bay, California. The application was deemed adequate and complete on April 4, 2022. Chevron's request is for take of seven species of marine mammals by Level B harassment only. Neither Chevron nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS previously issued IHAs to Chevron for vibratory pile driving and removal work (82 FR 27240, June 14, 2017; 83 FR 27548, June 13, 2018; 84 FR 28474, June 19, 2019; 85 FR 37064, June 19, 2020; 86 FR 28582, May 27, 2021). Chevron complied with all the requirements (*e.g.,* mitigation, monitoring, and reporting) of the previous IHAs and information regarding their monitoring results may be found in the **Description of Marine Mammals in Areas of the Specified Activity** section of the **Federal Register** notice for the proposed IHAs (87 FR 24950, April 27, 2022) and the **Estimated Take** section.

There are no changes from the proposed IHA to the final IHA.

Description of Proposed Activity

Overview

Chevron proposes to remove the decommissioned Point Orient Wharf (the Wharf) located in northeastern San Francisco Bay (the Bay), CA. The Wharf covers an area of approximately 8,094 m (2 acres) and extends just about 396 m (1,300 feet) into the Bay. Over the course of two years spanning from June 1, 2022- November 30, 2022 and June 1, 2023- November 30, 2023, Chevron will remove the Wharf in its entirety and restore eelgrass to the surrounding subtidal habitat, enhancing the environment of the Bay. Vibratory pile removal will be used to extract piles. This method is considered a non-impulsive continuous noise source that may result in the incidental take of marine mammals by Level B harassment in the form of behavioral harassment. NMFS has issued an IHA to Chevron for each of the two project years.

Dates and Duration

Chevron anticipates that removal of the Wharf will occur over two years. The in-water work window is anticipated to last from June 1 to November 30 in 2022 (Year 1) and June 1 to November 30 in 2023 (Year 2), although vibratory extraction will only occur in 12 weeks of each annual work period. The seasonal work window of June

through November each year is planned based upon the expectation that sensitive life stages of listed fish species, such as steelhead and salmon, will not be in the area. Construction will consist of approximately 100 in-water work days only during daylight hours.

Specific Geographic Region

The Wharf is located in central San Francisco Bay (the Bay) on the western side of Point San Pablo, approximately 2.9 km (1.8 miles) north of the eastern terminus of the Richmond San-Rafael Bridge (RSRB) in Contra Costa County (Figure 1). The Brothers Islands and Lighthouse are approximately 800 meters (2,600 feet) to the north of the Wharf. The Wharf is located near a shipping channel, and regular boat traffic in the vicinity accounts for the majority of ambient underwater noise in the area.

The Point Orient Wharf consists of two portions: a narrower portion of the Wharf that runs perpendicular to the shoreline, known as the Causeway and which will be removed in Year 1, and a wider portion that runs parallel to the shoreline, known as the Main Wharf and which will be removed in Year 2. While the Wharf was in use, a dredged channel and berthing area with a depth of approximately 10 m (33 feet) below mean lower low water (MLLW) was maintained on the western side of the Main Wharf. However, since the Wharf was decommissioned, the channel and berthing area have filled in with sediment. A deep scour pocket of approximately 15.2 m (50 feet) below MLLW is maintained by tidal action west of the Main Wharf and 10 m (33 feet) below MLLW southeast of the Main Wharf. Bathymetry along the Causeway ranges from the upper intertidal at the eastern end of the Causeway to a depth of approximately 4.9 m (16 feet) below MLLW at its western end.

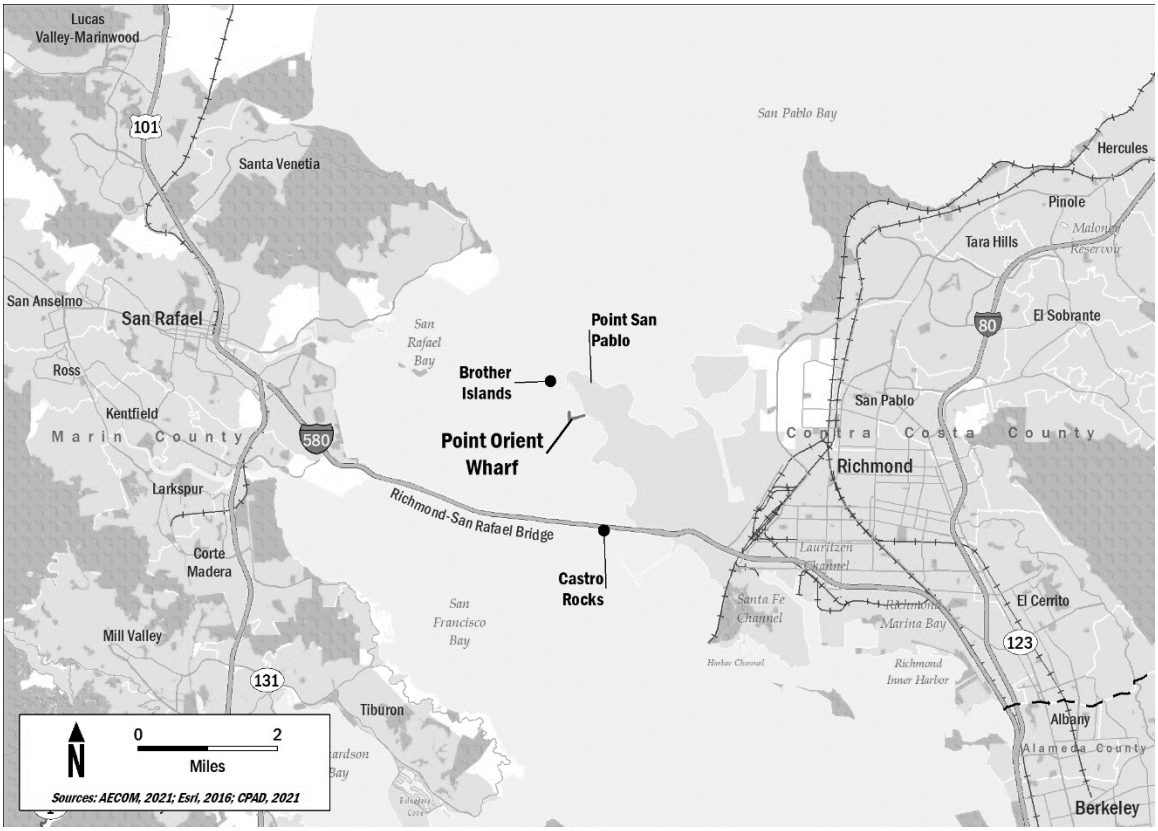

Figure 1. Point Orient Wharf Removal Project Location

Detailed Description of Specific Activity

Chevron intends to remove the Wharf in its entirety, and restore eelgrass to the subtidal habitat in areas under the Causeway portion of the Wharf that are currently affected by the shading imposed by the structure. This project will utilize vibratory removal to extract approximately 910 timber piles and 90 steel piles from the Bay (Table 1).

Table 1. Summary of Pile Removal Activities by Year

Pile Type	Diameter (inches)	Number of Piles	Approximate Duration of Vibration per Pile (minutes)	Approximate Number of Piles Removed per day	Total Number of Work Days
Year 1 Vibratory Extraction					
Timber	12	401	6	18	35*

Timber concrete encased	18 (12-inch timber core)	133	9	11	
Year 2 Vibratory Extraction					
Timber	12	220	6	18	27*
Timber concrete encased	18 (12-inch timber core)	156	9	11	
Steel	36	34	45	2	18
Steel	30	40	32	3	10
Steel	24	16	26	4	6

A detailed description of the planned Point Orient Wharf Removal is provided in the Federal Register notice for the proposed IHA (87 FR 24950; April 27, 2022). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the detailed description of the specific activity. Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation and Monitoring and Reporting**).

Comments and Responses

A notice of NMFS's proposal to issue an IHA to Chevron was published in the Federal Register on April 27, 2022 (87 FR 24950). That notice described, in detail, Chevron's activity, the marine mammal species that may be affected by the activity, and the anticipated effects on marine mammals. No public comments were received on the proposed notice.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, incorporated here by reference, instead of reprinting the

information. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species)*.

Table 2 lists all species or stocks for which take is expected and authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. Pacific Marine Mammal SARs (*e.g.*, Carretta *et al.,* 2021). All values presented in Table 2 are the most recent available at the time of publication and are available in the 2020 SARs (Carretta *et al.,* 2021) and draft 2021 SARs (available online at:

https://www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports).

Table 2. Species Likely Impacted by the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Cetartiodactyla – Cetacea – Superfamily Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray whale	*Eschrichtius robustus*	Eastern N Pacific	-, -, N	29960 (0.05, 25,849, 2016)	801	131
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Bottlenose Dolphin	*Tursiops truncatus*	California Coastal	-, -, N	453 (0.06, 346, 2011)	2.7	≥2.0
Family Phocoenidae (porpoises)						
Harbor Porpoise	*Phocoena phocoena*	San Francisco-Russian River	-, -, N	7,777 (0.62, 4,811, 2017)	73	≥0.4
Order Carnivora – Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California Sea Lion	*Zalophus californianus*	U.S.	-, -, N	257,606 (N/A, 233,515, 2014)	14,011	>320
Family Phocidae (earless seals)						
Harbor Seal	*Phoca vitulina*	California	-, -, N	30,968 (N/A, 27,348, 2012)	1,641	43
Northern Elephant Seal	*Mirounga angustirostris*	California Breeding	-, -, N	187,386 (N/A, 85,369, 2013)	5,122	5.3
Northern Fur Seal	*Callorhinus ursinus*	California	-, D, N	14,050 (N/A, 7,524, 2013)	451	1.8

[1] - Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] - NMFS marine mammal stock assessment reports online at: *www.nmfs.noaa.gov/pr/sars/.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable [explain if this is the case]

[3] - These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual M/SI (mortality/serious injury) often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

As indicated above, all 7 species (with 7 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. All species that could potentially occur in the proposed survey areas are included

in Table 4-1 of the IHA application. While humpback whales (*Megaptera noveangliae*) and Steller sea lions (*Eumetopias jubatus*) have been documented in the Bay area, the temporal and spatial occurrence of these species is such that take is not expected to occur. Therefore, they are not discussed further beyond the explanation provided in the **Federal Register** notice for the proposed IHA (87 FR 24950 April 27, 2022).

A detailed description of the species likely to be affected by Chevron's Point Orient Wharf Removal, including brief introductions to the species and relevant stocks as well as information regarding population trends and threats, and information regarding local occurrence were provided in the **Federal Register** notice for the proposed IHA (87 FR 24950 April 27, 2022); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to the **Federal Register** notice for these descriptions. Please also refer to NMFS's website (*https://fisheries.noaa.gov/find-species*) for generalized species accounts.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from Chevron's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of the proposed IHAs (87 FR 24950; April 27, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from Chevron's construction activities on marine mammals and their habitat. That information and analysis is not repeated here; please refer to the notice of proposed IHAs (87 FR 24950; April 27, 2022).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through these IHAs, which informed both NMFS' consideration of "small numbers" and the negligible impact determinations.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes are by Level B harassment only, in the form of disruption of behavioral patterns and/or TTS, for individual marine mammals resulting from exposure to vibratory pile removal. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.*, shutdown zones and protected species monitoring) – discussed in detail below in the **Mitigation** section, Level A harassment is neither anticipated nor authorized.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the take numbers are estimated.

For acoustic impacts, generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the take estimates.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment). Thresholds have also been developed identifying the received level of in-air sound above which exposed pinnipeds would likely be behaviorally harassed.

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.,* frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.,* 2007, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared pressure received levels (RMS SPL) of 120 dB (referenced to 1 micropascal (re 1 μPa)) for continuous (*e.g.,* vibratory pile-driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. For in-air sounds, NMFS predicts that harbor seals exposed above received levels of 90 dB re 20 μPa (rms) will be behaviorally harassed, and other pinnipeds will be harassed when exposed above 100 dB re 20 μPa (rms).

Chevron's Point Orient Wharf Removal includes the use of continuous non-impulsive (vibratory pile removal) sources, and therefore the RMS SPL 120 re 1 µPa is applicable.

Level A harassment – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). Chevron's Point Orient Wharf Removal includes the use non-impulsive vibratory pile removal.

These thresholds are provided in the table below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

Table 3. Thresholds Identifying the Onset of Permanent Threshold Shift.

	PTS Onset Thresholds* **(Received Level)**	
Hearing Group	**Impulsive**	**Non-impulsive**
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{p,0\text{-pk,flat}}$: 219 dB $L_{E,p,\text{LF,24h}}$: 1183 dB	*Cell 2* $L_{E,p,\text{LF,24h}}$: 199 dB
Mid-Frequency (MF) Cetaceans	*Cell 3* $L_{p,0\text{-pk,flat}}$: 230 dB $L_{E,p,\text{MF,24h}}$: 1185 dB	*Cell 4* $L_{E,p,\text{MF,24h}}$: 198 dB
High-Frequency (HF) Cetaceans	*Cell 5* $L_{p,0\text{-pk,flat}}$: 202 dB $L_{E,p,\text{HF,24h}}$: 155 dB	*Cell 6* $L_{E,p,\text{HF,24h}}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{p,0\text{-pk.flat}}$: 218 dB $L_{E,p,\text{PW,24h}}$: 1185 dB	*Cell 8* $L_{E,p,\text{PW,24h}}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{p,0\text{-pk,flat}}$: 232 dB $L_{E,p,\text{OW,24h}}$: 203 dB	*Cell 10* $L_{E,p,\text{OW,24h}}$: 219 dB
* Dual metric thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds are recommended for consideration. Note: Peak sound pressure level ($L_{p,0\text{-pk}}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO 2017). The subscript		

"flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (*i.e.*, 7 Hz to 160 kHz). The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss coefficient.

Pile extraction using a vibratory hammer will generate underwater noise that potentially could result in disturbance to marine mammals near the project area. A review of underwater sound measurements for similar projects was conducted to estimate the near-source sound levels for vibratory pile extraction for each pile type. Vibratory pile extraction (and if not available, vibratory driving) sound from similar type and sized piles have been measured from other projects and can be used to estimate the noise levels that this project would generate. This analysis uses the practical spreading loss model, a standard assumption regarding sound propagation for similar environments, to estimate transmission of sound through water. For this analysis, the transmission loss factor of 15 (4.5 dB per doubling of distance) is used. A weighting adjustment factor of 2.5, a standard default value for vibratory pile driving and removal, was used to calculate Level A harassment areas.

Pile extraction will include the removal of existing 12-inch timber piles during Year 1 and Year 2, and the removal of various sizes of steel piles during Year 2. Approximately 543 timber piles would be removed in Year 1 and 376 timber piles in Year 2. Of the timber piles in Year 1, 133 piles are encased in concrete, however, since the concrete wrapping is only present on the upper portion of the pile, these piles are expected to behave as the unwrapped timber piles in regards to generation of underwater

noise. Although some piles may be extracted with direct pulling, this analysis assumes that a vibratory pile driver will be used to remove all piles. Up to 18 of the unwrapped piles or 11 of the wrapped piles could be extracted in one work day, but on most days a co-mingling of the two types would likely be removed. Vibratory extraction time needed for each pile could require approximately 6 minutes for each of the unwrapped piles and 9 minutes for each of the concrete wrapped piles (Table 1). An estimated 35 work days will be spent in Year 1 removing timber piles and approximately 27 work days will be spent removing timber piles in Year 2 (Table 1). The most applicable noise values for timber pile removal from which to base estimates for the proposed project are the values used for the Pier 62/63 pile removal in Seattle, Washington (City of Seattle 2017). During vibratory pile extraction associated with this project, the RMS was estimated to be approximately 152 dB at a distance of 10 meters (City of Seattle, 2017) (Table 4).

In Year 2, 34 36-inch steel piles will be extracted. Each 36-inch steel pipe pile may require approximately 45 minutes of vibratory extraction for removal. Up to two of these piles could be removed in a single work day (Table 1). Chevron is planning a total of 18 work days to remove the 36-inch steel piles (Table 1). Installation of this pile type was hydro-acoustically monitored during the CLWMEP in 2019 (AECOM 2020). As pile installation typically produces more sound than vibratory removal, the sound levels during vibratory extraction in this project are expected to be equal to or less than the maximum sound levels recorded during that installation. The maximum measured peak sound value was 196 dB measured at 10 meters, and the highest median RMS value recorded was 167 dB measured at 15 meters (AECOM 2020) (Table 4).

Approximately 40 30-inch steel piles would also be removed in Year 2. Each 30-inch steel pipe pile may require approximately 32 minutes of vibratory extraction for removal. Up to three of these piles could be removed in a single work day (Table 1). Chevron has planned approximately 10 work days to remove the 30-inch steel piles

(Table 1). Installation of this pile type was hydro-acoustically monitored at the WETA Downtown Ferry Terminal in San Francisco, CA (Caltrans 2020). The sound levels during vibratory extraction are expected to be equal to or less than the maximum sound levels recorded during that installation. The maximum measured peak sound value was 183 dB measured at 7 meters, and the highest median rms value recorded was 156 dB measured at 7 meters (Caltrans 2020) (Table 4).

In Year 2, approximately 16 24-inch steel piles would be removed. Each 24-inch steel pile may require up to 26 minutes of vibration to remove (Table 1). Chevron has planned approximately 6 work days to remove the 24-inch steel piles (Table 1). Installation of this pile type was hydro-acoustically monitored at the WETA Downtown Ferry Terminal in San Francisco, CA (Caltrans 2020). The sound levels during vibratory extraction are expected to be equal to or less than the maximum sound levels recorded during that installation. For the 24-inch piles, the maximum measured peak sound value was 178 dB measured at 15 meters, and the highest median RMS value recorded was 157 dB measured at 15 meters (Caltrans 2020) (Table 4).

Table 4. Source Levels for Vibratory Removal of Piles for Year 1 and Year 2

Year 1		
Pile Type	Diameter (in)	Source Levels/Source Distance (m)
		Peak RMS
Timber	12	NA 152/10
Year 2		
Pile Type	Diameter (in)	Source Levels/Source Distance (m)
		Peak RMS
Timber	12	NA 152/10
Steel	36	196/10 167/15
Steel	30	183/7 156/7
Steel	24	178/15 157/15

The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods are not available or practical. For stationary sources (such as vibratory pile removal), the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it will be expected to incur PTS. Inputs used in the User Spreadsheet are reported in Table 1 and source levels used in the spreadsheet are reported in Table 4. The resulting Level A and Level B harassment isopleths as well as area of the Level B harassment isopleths are reported below in Table 5.

Table 5. Level A and Level B Harassment Isopleths by Pile Type

	Level A isopleths (m)					Level B isopleths (m)	Level B isopleth area (km^2)
Hearing Group	LF Cetaceans	MF Cetaceans	HF Cetaceans	Phocid Pinnipeds	Otariid Pinnipeds		
Pile Type							
Timber	3	1	4	2	1	1,359	3.81

36" steel	34	3	50	21	2	20,390	26.93
30" steel	3	1	5	2	1	1,758	0.93
24" steel	8	1	12	5	1	4,393	5.14

The maximum distance to the Level A harassment threshold during construction will be during the vibratory removal of the 36 inch steel piles during Year 2 (34 m for gray whales, 3 m for bottlenose dolphins, 50 m for harbor porpoises, 21 m for harbor seals, and 2 m for sea lions). The largest Level B harassment zone extends out to 20,390 m for extraction of the 36 inch steel piles. Area was calculated for each Level B harassment isopleth through a GIS exercise and incorporated into take calculations for California sea lions and harbor porpoises.

Marine Mammal Occurrence and Take Estimation

In this section we provide information about the occurrence of marine mammals, including density or other relevant information that will inform the take calculations. We will also describe how this information is brought together to produce a quantitative take estimate for each species.

Harbor Seals

Limited at-sea densities are available for Pacific harbor seals in San Francisco Bay. To estimate the number of harbor seals potentially exposed to Level B harassment, take estimates were developed based upon annual surveys of haul outs in San Francisco Bay conducted by the National Park Service (NPS) (Codde and Allen 2013, 2015, 2017, 2020; Codde 2020). Harbor seals spend more time hauled out and enter the water later in the evening during molting season (NPS 2014). The molting season occurs from June-July and overlaps with the construction period of June – November, therefore, haul out counts may provide accurate estimates of harbor seals in the area during that time. Due to

the close proximity of Castro Rocks to the project area, haul out occupancy of Castro Rocks was selected to determine take estimates. Calculations of take estimates were based upon the highest mean value of harbor seals observed at Castro Rocks during the molting season in any recent NPS annual survey. The highest mean number of harbor seals was recorded in 2019 as 237 seals (Table 6).

Based upon radio and telemetry data in San Francisco Bay, it is expected that harbor seals concentrate within 10 m of Castro Rocks in all directions while foraging (Grigg *et al.,* 2012). Due to the close proximity of the project area to Castro Rocks, it is expected that include all seals (237) on a given day would swim into the Level B harassment zone during steel pile extraction and half of the seals (119) would swim into the Level B harassment zone during timber pile extraction. Chevron requested a total of 4,165 takes of harbor seals by Level B harassment across the 35 planned work days in Year 1 (Table 7). In Year 2, Chevron requested a total of 11,271 takes of harbor seals by Level B harassment across the 61 planned work days (Table 8).

Chevron will implement shutdown zones based upon the distances to the Level A harassment threshold for each hearing group (Table 5). Therefore, takes of harbor seals by Level A harassment were not requested, nor are takes by Level A harassment authorized by NMFS.

California Sea Lions

Although there are no haul out sites for California sea lions in close proximity to the Wharf, sea lions have consistently been sighted in San Francisco Bay while monitoring during past construction projects (AECOM 2019, 2020; Caltrans 2017). During a long-term monitoring effort for the demolition and reuse of the original east span of the San Francisco Oakland Bay Bridge in the central Bay, 83 California sea lions were observed in the vicinity of the bridge over a 17-year period (2000 to 2017) (Caltrans 2017). In order to calculate the estimated at-sea density of sea lions, the number of sea

lions observed over the 17 year period (83 animals) was divided by the number of monitoring days (257 days) to find the number of sea lions observed per day. The total number of sea lions observed per day was then divided by the area of the monitoring zone (2 km^2) to derive an estimated at-sea density of 0.16 animals per square kilometer (Caltrans 2017) (Table 7). In order to calculate daily take estimate for the current Wharf removal project, sea lion density was multiplied by the area of the Level B harassment zone for each pile type (Tables 5). The daily take estimate was then multiplied by the number of work days for that pile type to receive a total take estimate per year (Tables 7, 8). Chevron requested a total of 22 takes of California sea lions by Level B harassment in Year 1, and a total of 542 takes of California sea lions by Level B harassment in Year 2 (Tables 7, 8).

Level A harassment takes of California sea lions were not requested by Chevron, nor are they authorized by NMFS. As Chevron will implement a shutdown zone for all Level A harassment isopleths for each hearing group, Level A harassment takes are not expected.

Harbor Porpoise

The harbor porpoise population has been growing over time in San Francisco Bay (Stern *et al.,* 2017). Although commonly sighted in the vicinity of Angel Island and the Golden Gate, approximately 6 and 12 kilometers (3.7 and 7.5 miles, respectively) southwest of the Wharf, individuals may use other areas of central San Francisco Bay (Keener 2011), as well as the project area.

As in the case of California sea lions, density estimates temporally and spatially aligned with the project work period were available for harbor porpoises based upon long term monitoring for the demolition and reuse of the original east span of the San Francisco Oakland Bay Bridge in the central Bay (Caltrans 2017). During the 257 days of monitoring from 2000-2017, approximately 24 harbor porpoises were observed in the

bridge vicinity. The total number of harbor porpoises observed per day was calculated by dividing the total number of harbor porpoises observed by the number of monitoring days. This estimate per day was then divided by the area of the monitoring zone for harbor porpoises (15 km^2) to calculate an at-sea density of harbor porpoises to be 0.17 harbor porpoises/square kilometer. In order to calculate a daily take estimate for the current Wharf removal project, the density of harbor porpoises (0.17) was multiplied by the area of the Level B harassment zone for each pile type (Table 5). To calculate a total take estimate of harbor porpoises per year, the daily estimate was multiplied by the number of anticipated work days for each pile type (Tables 1, 7, 8). Chevron requested a total of 23 takes of harbor porpoises by Level B harassment in Year 1 (Table 8), and a total of 576 takes of harbor porpoises by Level B harassment in Year 2 (Table 9).

Takes of harbor porpoises by Level A harassment are not expected as Chevron plans to shut down construction activities within the Level A harassment zones for all pile types and hearing groups. NMFS has not authorized Level A harassment takes of harbor porpoises, nor have Level A harassment takes been requested.

Bottlenose Dolphin

Bottlenose dolphins in San Francisco Bay are typically observed west of Treasure Island, near the Golden Gate at the mouth of the Bay, and along the nearshore areas of San Francisco south to Redwood City (Bay Nature Institute 2014; NMFS 2017). The numbers of dolphins in San Francisco Bay have been increasing over the years (Perlman 2017; Szczepaniak *et al.,* 2013). Although dolphins may occur in the Bay year-round, density estimates are limited. Beginning in 2015, two individuals have been observed frequently in the vicinity of Alameda (APER 2019; Perlman 2017). The average reported group size for bottlenose dolphins in this area is five. Assuming a group of five dolphins comes into San Francisco Bay on two week intervals and vibratory pile extraction occurs over 6 two-week periods, 30 takes of bottlenose dolphins would be expected if the group

enters the area over which the Level B harassment thresholds may be exceeded (Tables 8, 9). Chevron requested 30 takes of bottlenose dolphins by Level B harassment per year (Tables 8, 9).

Takes of bottlenose dolphins by Level A harassment are not anticipated as Chevron plans to implement a shutdown zone for all Level A harassment isopleths. Takes of bottlenose dolphins by Level A harassment were not requested by Chevron nor are they authorized by NMFS.

Gray Whale

Gray whales are most often sighted in San Francisco Bay during February and March, however, Wharf removal is not planned to occur during this time. Prior monitoring reports of similar projects occurring during the same work windows did not document gray whales in the area (AECOM 2019, 2020). Limited sightings of gray whales in the Bay include strandings, (Bartlett 2022; TMMC 2019), monitoring during work on the RSRB (Winning 2008), and whale watch reports (Bartlett 2022). At-sea densities and regular observational data for gray whales in San Francisco Bay during the planned project time are not available. Therefore, take estimates are based upon the potential for one pair of gray whales to be present in the project area each year. In the event that gray whales are in the project area during the time of construction activities, Chevron requested two takes of gray whales by Level B harassment per year (Tables 8, 9).

Takes of gray whales by Level A harassment are not anticipated as Chevron plans to shut down construction activities within the Level A harassment zones for all pile types and hearing groups. NMFS has not authorized any takes by Level A harassment of gray whales, nor were any takes by Level A harassment requested.

Northern Elephant Seal

Small numbers of elephant seals may haul out or strand within central San Francisco Bay (Caltrans 2015; Hernández 2020). Previous monitoring, however, has shown northern elephant seal densities to be very low in the area and out of season for the proposed Wharf removal project. Additionally, northern elephant seals were not observed during pile driving monitoring for the CLWMEP from 2018-2020, which was located just south of the proposed project area. However, as northern elephant seals have been sighted in the Bay, and on assumption that an elephant seal enters the Level B harassment zone once every three days during pile extraction, Chevron requested authorization of a total of 12 takes of elephant seals by Level B harassment during Year 1 and 21 takes of elephant seals by Level B harassment during Year 2 (Tables 8, 9).

Takes of elephant seals by Level A harassment are not anticipated as Chevron plans to implement a shutdown zone for all Level A harassment isopleths. Takes of elephant seals by Level A harassment were not requested by Chevron nor are they authorized by NMFS.

Northern Fur Seal

The presence of northern fur seals in San Francisco Bay depends upon oceanic conditions, as more fur seals are likely to strand during El Niño events (TMMC 2016). Equatorial sea surface temperatures of the Pacific Ocean have been below average across most of the Pacific, and La Niña conditions are likely to remain for most of spring 2022. During summer 2022, La Niña conditions are expected to remain or transition into neutral El Niño conditions (NOAA 2022). Since there are no estimated at-sea densities for this species in San Francisco Bay, Chevron conservatively requested, and NMFS authorized, 10 takes of northern fur seals per year by Level B harassment (Tables 8, 9).

Takes of northern fur seals by Level A harassment are not anticipated as Chevron plans to shut down construction activities within the Level A harassment zones for all

pile types and hearing groups. NMFS did not authorize takes of northern fur seals by Level A harassment, nor have takes by Level A harassment been requested.

Table 7. Estimated marine mammal densities and occurrences

Species	Stock	Estimated Density/ Occurrence	References
Harbor Seals	California	237 per day in June-July (molt season)	(Codde and Allen 2013, 2015, 2017, 2020; Codde 2020)
California Sea Lions	U.S.	0.16 animals/km^2	(Caltrans 2017)
Harbor Porpoise	SF-Russian River	0.17 animals/km^2	(Caltrans 2017)
Bottlenose Dolphin	CA Coastal	Average group size of 5 present in the Bay in two week intervals	(APER 2019; Perlman 2017)
Gray Whale	Eastern N Pacific	Rare; 2 whales per year	(TMMC 2019; Winning 2008)
Northern Elephant Seal	CA Breeding	Rare; once every 3 days	(Caltrans 2015; Hernández 2020)
Northern Fur Seal	California	Rare; 10 seals per year	(TMMC 2016)

Table 8. Authorized Amount of Marine Mammal Level B Takes by Species and Stock, and Percent of Takes by Stock Year 1

Species	Stock	Pile Type/Size	Requested Total Take	Percent of Stock
Harbor Seals	California*	timber 12"	4165*	13.4*
California Sea Lions	U.S.	timber 12"	22	<0.01
Harbor Porpoise	San Francisco-Russian River	timber 12"	23	0.3
Bottlenose Dolphin	CA Coastal	timber 12"	30	6.6
Gray Whale	Eastern North Pacific	timber 12"	2	<0.01
Northern Elephant Seal	California Breeding	timber 12"	12	<0.01
Northern Fur Seal	California	timber 12"	10	0.07

** Assumes multiple repeated takes of the same individuals from a small portion of the stock. Please see the small numbers section for additional information.*
Abundance estimates are taken from the 2020 U.S. Pacific Marine Mammal Stock Assessments (Carretta et al., 2021)

Table 9. Authorized Amount of Marine Mammal Level B Takes by Species and Stock, and Percent of Takes by Stock Year 2

Species	Stock	Pile Type/Size	Requested Total Take	percent of Stock
Harbor Seals	California *	timber 12"	3213	
		steel 36"	4266	
		steel 30"	2370	
		steel 24"	1422	
Total			11271*	36.4*
California Sea Lions	U.S.	timber 12"	17	
		steel 36"	485	
		steel 30"	9	
		steel 24"	31	
Total			542	1.3
Harbor Porpoise	San Francisco-Russian River	timber 12"	18	
		steel 36"	515	
		steel 30"	10	
		steel 24"	33	
Total			576	7.4
Bottlenose Dolphin	California Coastal		30	6.6
Gray Whale	Eastern North Pacific		2	<0.01
Northern Elephant Seal	California Breeding		21	0.01
Northern Fur Seal	California		10	0.07

** Assumes multiple repeated takes of the same individuals from a small portion of the stock. Please see the small numbers section for additional information.*
Abundance estimates are taken from the 2020 U.S. Pacific Marine Mammal Stock Assessments (Carretta et al., 2021)

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other

means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost and impact on operations.

Mitigation for Marine Mammals and their Habitat

The following mitigation measures are included in Chevron's removal of the Point Orient Wharf:

- *Time restriction*: For all in-water pile removal activities, Chevron shall operate only during daylight hours when visual monitoring of marine mammals can be conducted;
- *Establishment of shutdown zones*: Shutdown zones will be established for each pile type to include the Level A harassment zone for each hearing group. The Level A harassment zone encompasses all of the area where underwater sound pressure levels are expected to reach or exceed the cumulative SEL thresholds for Level A harassment (Table 4). The radii of the shutdown zones will be to the next

largest 10 m interval from the values provided in Table 5, with a minimum shutdown zone of 10 m; and

- *Protected Species Observers (PSOs)*: Trained PSOs will conduct visual monitoring from clear, elevated vantage points, along the shoreline or construction barges, where the entirety of the shutdown zones can be observed. PSOs will monitor the shutdown zones for 30 minutes prior to any pile extraction activity to be sure marine mammals are not in the zones. Pile extraction will not commence until marine mammals have not been sighted within the shutdown zone for 30 minutes. If a marine mammal is observed entering a shutdown zone during pile extraction, construction activities will stop until the marine mammal leaves the zone, and will not resume until no marine mammals are observed in the shutdown zone for 30 minutes. If a marine mammal is seen above water and dives below, a 15 minute wait period will begin. If the marine mammal is not redetected in that time, it will be assumed that the marine mammal has moved beyond the shutdown zone, and construction activities will continue.

Based on our evaluation of the applicant's mitigation measures, NMFS has determined that the mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected

to be present while conducting the activities. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

Chevron will monitor the shutdown zones and monitoring zones before, during, and after pile removal activities with at least two PSOs located at the best practicable vantage points. Based upon our requirements, the Marine Mammal Monitoring Plan will implement the following procedures for pile removal:

- PSOs must be independent observers (*i.e.* not construction personnel). All PSOs must have the ability to conduct field observations and collect data according to assigned protocols, be experienced in field identification of marine mammals and their behaviors, and submit their resumes to NMFS for approval;
- Biological monitoring will occur within one week of the project's start date to establish baseline observation;
- Observation periods will encompass different tide levels at different hours of the day;
- Monitoring will occur from elevated locations along the shoreline or on barges where the entire shutdown zones and monitoring zones are visible. If visibility decreases, such as due to fog or weather, vibratory pile extraction will be stopped until PSOs are able to view the entire shutdown zone;
- PSOs will be equipped with high quality binoculars for monitoring and radios or cells phones for maintaining contact with work crews;
- PSOs will implement clearing of the shutdown and monitoring zones as well as shutdown procedures; and
- At the end of the pile removal day, post-construction monitoring will be conducted for 30 minutes beyond the cessation of pile removal.

Data Collection

Chevron will record detailed information about implementation of shutdowns, counts and behaviors (if possible) of all marine mammal species observed, times of observations, construction activities that occurred, any acoustic and visual disturbances, and weather conditions. PSOs will use approved data forms to record the following information:

- Date and time that permitted construction activity begins and ends;
- Type of pile removal activities that take place;

- Weather parameters (*e.g.,* percent cloud cover, percent glare, visibility, air temperature, tide level, Beaufort sea state);
- Species counts, and, if possible, sex and age classes of any observed marine mammal species;
- Marine mammal behavior patterns, including bearing and direction of travel;
- Any observed behavioral reactions just prior to, during, or after construction activities;
- Location of marine mammal, distance from observer to the marine mammal, and distance from pile removal activities to marine mammals;
- Record of whether an observation required the implementation of mitigation measures, including shutdown procedures and the duration of each shutdown; and
- Any acoustic or visual disturbances that take place.

Reporting Measures

Chevron shall submit a draft report to NMFS within 90 days of the completion of marine mammal monitoring, or 60 days prior to the issuance of any subsequent IHA for this project (if required), whichever comes first. The annual report will detail the monitoring protocol, summarize the data recorded during monitoring, and estimate the number of marine mammals that may have been harassed. If no comments are received from NMFS within 30 days, the draft final report will become final. If comments are received, a final report must be submitted up to 30 days after receipt of comments. All PSO datasheets and/or raw sighting data must be submitted with the draft marine mammal report.

Reports shall contain the following information:

- Dates and times (begin and end) of all marine mammal monitoring.

- Construction activities occurring during each daily observation period including: (a) How many and what type of piles were removed; and (b) the total duration of time for removal of each pile;
- PSO locations during monitoring; and
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.

Upon observation of a marine mammal, the following information must be reported:

- Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
- Time of sighting;
- Identification of the animal (s) (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and location of each observed marine mammal relative to pile removal for each sighting;
- Estimated number of animals by species (min/max/best estimate);
- Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.);
- Description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.,* no response or

changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching); and

- Detailed information about implementation of any mitigation (*e.g.,* shutdowns and delays), a description of specified actions that ensured, and resulting changes in behavior of the animal(s), if any.

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the IHA (if issued), such as an injury (Level A harassment), serious injury or mortality (*e.g.,* ship-strike, gear interaction, and/or entanglement), Chevron would immediately cease the specified activities and immediately report the incident to the Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov*) and the West Coast Regional Stranding Coordinator. The report would include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Name and type of vessel involved (if applicable);
- Vessel's speed during and leading up to the incident (if applicable);
- Description of the incident;
- Status of all sound source used in the 24 hours preceding the incident;
- Water depth;
- Environmental conditions (*e.g.,* wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

Activities would not resume until NMFS is able to review the circumstances of the prohibited take. NMFS would work with Chevron to determine necessary actions to minimize the likelihood of further prohibited take and ensure MMPA compliance. Chevron would not be able to resume their activities until notified by NMFS via letter, email, or telephone.

- In the event that Chevron discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.,* in less than a moderate state of decomposition as described in the next paragraph), Chevron would immediately report the incident to the Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov*) and the West Coast Regional Stranding Coordinator. The report would include the same information identified in the section above. Activities would be able to continue while NMFS reviews the circumstances of the incident. NMFS would work with Chevron to determine whether modifications in the activities are appropriate.
- In the event that Chevron discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.,* previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), Chevron would report the incident to Office of Protected Resources (*PR.ITP.MonitoringReports@noaa.gov*) and West Coast Regional Stranding Coordinator, within 24 hours of the discovery. Chevron would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network. Pile removal activities would be permitted to continue.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to all the species listed in Table 2, given that the anticipated effects of this activity on these different marine mammal stocks are expected to be similar. There is little information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for this activity.

Pile removal activities have the potential to disturb or displace marine mammals. The project activities may result in take in the form of Level B harassment from

underwater sounds generated by vibratory pile removal. Potential takes could occur if individuals move into in the ensonified area when construction activities are underway.

The takes from Level B harassment will be due to potential behavioral disturbance and TTS. No serious injury or mortality is anticipated for any stocks presented in this analysis given the nature of the activity and mitigation measures designed to minimize the possibility of injury. The potential for harassment is minimized through construction method and the implementation of planned mitigation strategies (see **Mitigation** section).

No marine mammal stocks for which incidental take authorization is proposed are listed as threatened or endangered under the ESA or determined to be strategic or depleted under the MMPA. The relatively low marine mammal density, small shutdown zones, and planned monitoring also make injury takes of marine mammals unlikely. The shutdown zones will be thoroughly monitored before the vibratory pile removal begins and construction activities will be postponed if a marine mammal is sighted within the shutdown zone. There is a high likelihood that marine mammals will be detected by trained observers under environmental conditions described for the proposed project. Limiting construction activities to daylight hours will also increase detectability of marine mammal in the area. Therefore, the mitigation and monitoring measures are expected to eliminate the potential for injury and Level A harassment as well as reduce the amount and intensity for Level B behavioral harassment. Furthermore, the pile removal activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations which have occurred with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment.

Anticipated and authorized takes are expected to be limited to short-term Level B harassment (behavioral disturbance and TTS) as construction activities will occur over

the course of 12 weeks and removal of each pile lasts only approximately 6-45 minutes. Effects on individuals taken by Level B harassment, based upon reports in the literature as well as monitoring from other similar activities, may include increased swimming speeds, increased surfacing time, or decreased foraging (*e.g.,* Thorson and Reyff 2006). Individual animals, even if taken multiple times, will likely move away from the sound source and be temporarily displaced from the area due to elevated noise level during pile removal. Marine mammals could also experience TTS if they move into the Level B monitoring zone. TTS is a temporary loss of hearing sensitivity when exposed to loud sound, and the hearing threshold is expected to recover completely within minutes to hours. Thus, it is not considered an injury. Repeated exposures of individuals to levels of sounds that could cause Level B harassment are unlikely to considerably significantly disrupt foraging behavior or result in significant decrease in fitness, reproduction, or survival for the affected individuals. In all, there will be no adverse impacts to the stock as a whole.

As previously described, a UME has been declared for Eastern Pacific gray whales. However, we do not expect takes authorized by this action to exacerbate the ongoing UME. As mentioned previously, no injury or mortality is authorized, and Level B harassment takes of gray whales will be reduced to the level of least practicable adverse impact through incorporation of the proposed mitigation measures. Given that only 2 takes by Level B harassment are authorized for this stock annually, we do not expect the takes to compound the ongoing UME.

The project is not expected to have significant adverse effects on marine mammal habitat. There are no Biologically Important Areas or ESA-designated habitat within the project area. While EFH for several fish species does exist in the project area, the activities will not permanently modify existing marine mammal habitat. The activities may cause fish to leave the area temporarily. This could impact marine mammals'

foraging opportunities in a limited portion of the foraging range, however, due to the short duration of activities and the relatively small area of affected habitat, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

In summary and as described above, the following factors primarily support our final determination that the impacts resulting from this activity are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- No Level A harassment, including injury or serious injury, is anticipated or authorized;
- Anticipated impacts of Level B harassment include temporary behavior modifications or TTS;
- Short duration and intermittent nature of in-water construction activities;
- The specified activity and associated ensonified areas are very small relative to the overall habitat ranges of all species and do not include habitat areas of special significance (Biologically Important Areas or ESA-designated critical habitat);
- The lack of anticipated significant or long-term effects to marine mammal habitat;
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity;
- Monitoring reports from similar work in San Francisco Bay have documented little to no effect on individuals of the same species impacted by the specified activities.

These factors, in addition to the available body of evidence from prior similar activities, demonstrate that the potential effects of the specified activity will have only short-term effects on individuals. The specified activity is not expected to impact rates of recruitment or survival, and will therefore not result in population-level impacts.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS has authorized in Year 1 is below one-third of the estimated stock abundance for all impacted stocks (Table 8). The number of animals authorized to be taken during Year 1 would be considered small relative to the relevant stocks or populations, even if each estimated take occurred to a new individual. Furthermore, these takes are likely to only occur within a small portion of the overall regional stock and the likelihood that each take would occur to a new individual is low.

The amount of take NMFS has authorized in Year 2 is below one-third of the estimated stock abundance for California sea lions, harbor porpoises, bottlenose dolphins, gray whales, northern elephant seals, and northern fur seals (Table 9). The take percentage of the estimated take of harbor seals is approximately 36.4 percent, however, take estimates are conservative as they assume all takes are of different individuals which is likely not the case. Some individuals may return to the area multiple times a week, but PSOs would count them as separate takes. Furthermore, the project area represents a small portion of the overall range of harbor seals and activities are will most likely to impact only a small portion of the stock. Therefore, since take estimates likely include repeated takes of the same individuals over time, take estimates are expected to represent a smaller percentage of the total stock.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds, specific to both the Year 1 and Year 2 IHAs that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks will not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216-6A, NMFS must evaluate our proposed action (*i.e.,* the issuance of an IHA) and alternatives with respect to potential impacts on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 of the Companion Manual for NAO 216-6A,

which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that this action qualifies to be categorically excluded from further NEPA review.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq*.) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Authorization

NMFS has issued two consecutive IHAs to Chevron for the potential harassment of small numbers of the seven marine mammal species incidental to the Point Orient Wharf Removal in San Francisco Bay, CA, provided the previously mentioned mitigation, monitoring, and reporting requirements are followed.

Dated: June 3, 2022.

Catherine Marzin,

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